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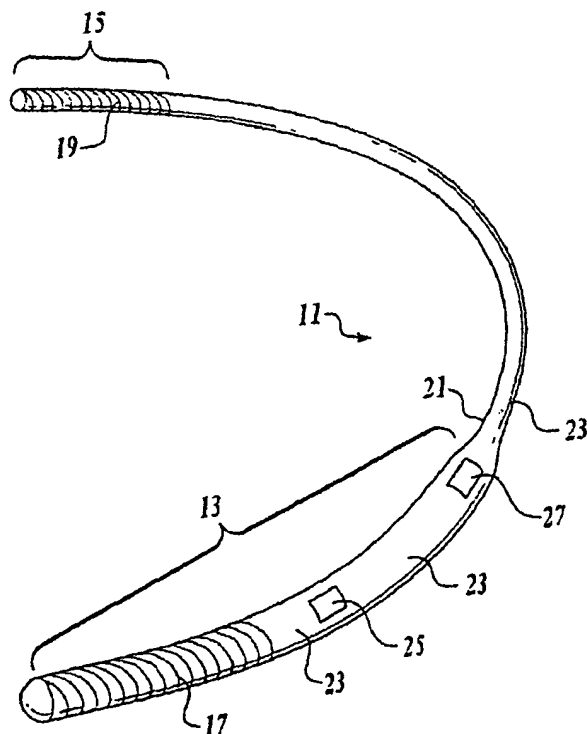
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[Continued on next page]

(54) Title: **UNITARY SUBCUTANEOUS ONLY IMPLANTABLE CARDIOVERTER-DEBRIBILLATOR AND OPTIONAL PACER**



(57) Abstract: A unitary subcutaneous implantable cardioverter-defibrillator is disclosed which has a long thin housing in the shape of a patient's rib. The housing contains a source of electrical energy, a capacitor, and operational circuitry that senses the presence of potentially fatal heart rhythms. Provided on the housing are cardioversion/defibrillation electrodes located to deliver electrical cardioversion-defibrillation energy when the operational circuitry senses a potentially fatal heart rhythm. The unitary subcutaneous implantable cardioverter-defibrillator does not have a transvenous, intracardiac, epicardial, or subcutaneous electrode.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61N1/39

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 385 574 A (HAUSER ROBERT G ET AL) 31 January 1995 (1995-01-31) the whole document	1, 35, 69, 85, 96, 102, 103, 105-108
A	US 4 157 720 A (GREATBATCH WILSON) 12 June 1979 (1979-06-12) the whole document	1, 35, 69, 85, 96, 102, 103, 105-108
A	EP 0 627 237 A (TRABUCCO HECTOR OSVALDO ; GAVRIELIDES JORDAN (DE)) 7 December 1994 (1994-12-07) the whole document	1, 35, 69, 85, 96, 102, 103, 105-108
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 331 966 A (BENNETT TOM D ET AL) 26 July 1994 (1994-07-26) the whole document ----	1, 35, 69, 85, 96, 102, 103, 105-108
Y	WO 99 53991 A (ALZA CORP) 28 October 1999 (1999-10-28) the whole document ----	113
Y	US 6 093 173 A (BALCETA JOBERT P ET AL) 25 July 2000 (2000-07-25) the whole document ----	113
A	WO 97 29802 A (LOEB GERALD E ; RICHMOND FRANCES J R (CA); ADVANCED BIONICS CORP (U) 21 August 1997 (1997-08-21) the whole document -----	113

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-31,35-108

unitary subcutaneous implantable cardioverter-defibrillator

2. Claim : 113

apparatus for implanting an implantable
cardioverter-defibrillator

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5385574	A	31-01-1995	US 5133353 A	28-07-1992
			AT 168024 T	15-07-1998
			AU 641224 B2	16-09-1993
			AU 7354591 A	07-11-1991
			CA 2040800 A1	26-10-1991
			DE 69129716 D1	13-08-1998
			DE 69129716 T2	24-12-1998
			DK 453761 T3	19-04-1999
			EP 0453761 A1	30-10-1991
			ES 2120411 T3	01-11-1998
			JP 5064666 A	19-03-1993
			US 6157860 A	05-12-2000
			US 5713926 A	03-02-1998
			US 6280462 B1	28-08-2001
			US 5916238 A	29-06-1999
US 4157720	A	12-06-1979	AU 521296 B2	25-03-1982
			AU 3986278 A	20-03-1980
			CA 1120548 A1	23-03-1982
			DE 2840307 A1	29-03-1979
			FR 2403075 A1	13-04-1979
			GB 2004188 A ,B	28-03-1979
			IL 55526 A	31-03-1981
			JP 54060791 A	16-05-1979
			MX 146747 A	05-08-1982
			NL 7809422 A	20-03-1979
			SE 7809645 A	17-03-1979
EP 0627237	A	07-12-1994	US 5243977 A	14-09-1993
			EP 0627237 A1	07-12-1994
US 5331966	A	26-07-1994	AU 654552 B2	10-11-1994
			AU 1750692 A	02-11-1992
			CA 2106378 A1	06-10-1992
			DE 69210395 D1	05-06-1996
			DE 69210395 T2	09-01-1997
			EP 0578748 A1	19-01-1994
			JP 2655204 B2	17-09-1997
			JP 6505662 T	30-06-1994
			WO 9217240 A1	15-10-1992
WO 9953991	A	28-10-1999	AU 3748899 A	08-11-1999
			TW 442273 B	23-06-2001
			WO 9953991 A1	28-10-1999
US 6093173	A	25-07-2000	NONE	
WO 9729802	A	21-08-1997	WO 9729802 A2	21-08-1997
			US 6185455 B1	06-02-2001
			US 6214032 B1	10-04-2001
			US 6051017 A	18-04-2000